HONG KONG JOURNAL OF SOCIAL SCIENCES

香港社會科學學報

第一的第 60 期 (2022 春/夏) Vol. 60 Autumn/Winter 2022

Open Access Article https://doi.org/10.55463/hkjss.issn.1021-3619.60.93

Criteria for Evaluating the Omani Science Curriculum (Cambridge) for Grades 5-8 considering Oman Vision 2040

Ahmed Al Balushi[1], Mohammed Mai[2]*

[1] *PhD student, Faculty of Human Development, Universiti Pendidikan Sultan Idris, UPSI Azaln Shah Campus, 35900 Tanjong Malim, Perak, Malaysia*

[2] *Faculty of Human Development, Universiti Pendidikan Sultan Idris, UPSI Azaln Shah Campus, 35900 Tanjong Malim, Perak, Malaysia*

Received: January 15, 2023 ▪ Reviewed: February 2, 2023

▪ Accepted: February 23, 2023 ▪ Published: March 30, 2023

Abstract:
This study identified the criteria for evaluating the Omani Science Curriculum (Cambridge) for Grades 5-8 considering the objectives of the Oman Vision 2040. To achieve this, the study adopted a descriptive approach to data collection and analysis. The researcher prepared a list of criteria for the objectives of Oman Vision 2040 built through previous studies and the Omani Vision document considering five axes: values and principles of the Islamic religion, Omani identity and heritage, sustainable development, future skills, and educational paths. The sample consisted of 12 arbitrators with expertise and experience in science, curricula, teaching methods, methods of teaching science, measurement, and evaluation to express their observations about the form in terms of the formulation of its vocabulary, the extent to which the criteria belong to the targeted objectives, their suitability, scientific accuracy, and clarity, and considering the arbitrators' observations. After taking the referees' comments, the list of criteria in its final form consisted of 5 axes, which included 40 criteria. The study will be useful to the Sultanate of Oman by reconsidering the extent to which science curricula include the Criteria for the objectives of Oman Vision 2040. There are no studies aimed at evaluating the Omani Science curriculum (Cambridge) considering Oman 2040 vision. Hence, the researchers should study the inclusion of the criteria of the Oman Vision 2040 in the objectives of the Omani Science curriculum (Cambridge) for Basic Grades 5-8. Hence, the study came with the aim of evaluating the science curriculum considering the objectives of Oman Vision 2040.

Keywords: Oman Vision 2040, curriculum criteria as seen in Oman Vision 2040, curriculum evaluation, Omani science curriculum (Cambridge).

考虑阿曼 2040 年愿景的 5-8 年级阿曼科学课程（剑桥）评估标准

Corresponding Author: Mohammed Mai, Faculty of Human Development, Universiti Pendidikan Sultan Idris, UPSI Azaln Shah Campus, Tanjong Malim, Malaysia; email: Mohammed.mai@fpm.upsi.edu.my

摘要：
考虑到阿曼 2040 年愿景的目标，本研究确定了评估 5-8 年级阿曼科学课程（剑桥）的标准。为实现这一目标，该研究采用了描述性方法来收集和分析数据。研究人员根据之前的研究和阿曼愿景文件制定了一份阿曼 2040 年愿景的目标标准清单，考虑了五个轴：伊斯兰宗教的价值观和原则、阿曼身份和遗产、可持续发展、未来技能和教育途径。样本由 12 名仲裁员组成，他们在科学、课程、教学方法、科学教学方法、测量和评估方面具有专业知识和经验，以表达他们对词汇表形式、标准所属程度的形式的观察 目标、它们的适用性、科学准确性和清晰度，并考虑仲裁员的意见。在听取了裁判的意见后，最终形式的标准列表由 5 个轴组成，其中包括 40 个标准。通过重新考虑科学课程在多大程度上包括阿曼 2040 年愿景目标的标准，该研究将对阿曼苏丹国有用。没有旨在评估考虑阿曼 2040 年愿景的阿曼科学课程（剑桥）的研究。因此，研究人员应研究将阿曼 2040 年愿景的标准纳入阿曼 5-8 年级基础科学课程(剑桥)的目标。因此，该研究的目的是根据阿曼 2040 年愿景的目标评估科学课程。

关键词：阿曼 2040 年愿景，阿曼 2040 年愿景中的课程标准，课程评估，阿曼科学课程（剑桥）。

1. Introduction

Standards for evaluating the curriculum documents include standards for curriculum philosophy, objectives, content, activities, teaching and learning methods, criteria for sources of knowledge, technology, and evaluation. Standards for teacher evaluation through several areas: planning, learning strategies and classroom management, scientific material, and evaluation, whether self or student and teacher professionalism, professional ethics, or development. Standards for evaluating learning outcomes through several areas: knowledge structure - scientific and practical skills - contemporary life skills - personal and social aspects.

Oman Vision 2040, announced in 2019, has been a gateway to tackling challenges, keeping pace with regional and international changes, investing in opportunities, and generating new ones. Principles of citizenship and authentic Omani identity aim at modernizing the educational system and supporting scientific research and innovation, as stated in the National Education Strategy 2040 (2018): the development of the curriculum for school education sequences of subjects considering national criteria and international best practices for the quality of school outputs.

The curricula in the Sultanate of Oman, as an essential component of the educational system, have received a continuous review and comprehensive development in its various aspects. Starting with syllabuses, teaching methods, assessment methods, etc.; this is in line with the future vision of education in the Sultanate 2040 AD, and in line with its philosophy and objectives (Ministry of Education, 2017, p. 3). Hence, the study came with the aim of finding out the availability of science curricula criteria for international series for Grades 5-8 in the Sultanate of Oman considering Oman Vision 2040.

1.1. Study Problem

The Ministry of Education in Oman has paid great attention to science education and learning in line with the latest scientific, technological, and cognitive developments. From this viewpoint, the Ministry of Education in Oman has tended to benefit from international expertise, in line with the rapid growth in this field, by adopting the Omani Science curriculum project (Cambridge) for teaching science following international criteria. It is vital to develop the skills of research, investigation, and conclusion among students and to deepen their understanding of various scientific phenomena (Ministry of Education, 2017).

Many studies have evaluated the curriculum based on specific criteria yet did not carry it out per the criteria and objectives of Oman Vision 2040. Generally, the study by Al Badri and Mokhtar (2020) recommended evaluating the curricula, ensuring that they achieve the required objective. Additionally, these studies also suggested reviewing the content of science books, including educational experiences. Thus, it can achieve the percentages referred to in the frameworks for evaluating science learning along with fulfilling other educational and societal goals. On the other hand, other studies (Algaseem & Al-Omari, 2020; Al-Sadiq, 2019; Abu Athera, 2019; AlShehri, 2018) recommended having standards for evaluating science curricula.

From previous studies, there are no studies aimed at evaluating the Omani science curriculum (Cambridge) considering Oman Vision 2040. There is no list of criteria for the objective of the vision; therefore, we need a list of these criteria, through which Omani science curricula for Grades 5-8 (Cambridge) can be evaluated. One research question defines this study: What are the Omani Science curriculum (Cambridge) criteria for Grades 5-8 considering Oman Vision 2040?

1.2. Objectives of the Study

Based on previous studies, literary references, Oman

Vision 2040, and the National Strategy for Education, this study aims to determine the criteria of the Omani Science curriculum (Cambridge) for Grades 5-8 that have been achieved for the Oman Vision 2040. It may be difficult to apply the results of the study because the science curricula applied in the Sultanate of Oman are new, and the application of these results may require a period.

1.3. The Importance of the Study

Evaluating the Omani science curriculum (Cambridge) for Grades 5-8 considering the objectives of Oman Vision 2040 would greatly benefit this research as:

- It is a research attempt that seeks to verify the activation of the Oman Vision 2040 and to adapt its objectives to evaluating the Omani science curriculum (Cambridge) for Grades 5-8.
- It can provide feedback to those in charge of the Omani science curriculum (Cambridge) for Grades 5-8 and decision-makers in including the objectives of the Oman Vision 2040 in these curriculums.
- Those in charge of science curricula and decision-makers can benefit from the results of this study. It will provide them with a list of criteria according to the Oman Vision 2040, which can be used as a guide when evaluating science curricula for Grades 1-4 and 9-12 in the future.
- Researchers in the curricula and science teaching methods can benefit from this study by opening new doors in evaluating basic education curricula to conduct studies related to the current study.

1.4. Study Terminology

Oman Vision 2040: Developing the future vision (Oman 2040) with mastery and high precision considering broad societal consensus and with the participation of all segments of society. The vision should be relevant to the socio-economic context and objectively foresee the future, to be recognized as a guide and key reference for planning activities in the next two decades.

Curriculum objectives as seen in Oman Vision 2040: Five key measurable objectives, including comprehensive education and a lifelong education system, are to develop the skills of the future and establish a possible knowledge society that is proud of its identity and culture. They are committed to their citizenship and values (Oman Vision 2040, 2019).

Curriculum criteria as seen in Oman Vision 2040: The criteria are "descriptive terms that define the knowledge, skills, and values that the student must acquire in each subject, classroom, and are valid for judging the extent to which learning is achieved" (Ministry of Education, 2017).

Omani Science curriculum (Cambridge) for Grades 5-8: The Omani curricula for Grades 5-8 were approved by the Ministry of Education in the Sultanate of Oman to be taught in schools starting from the academic year 2018/2019 in the name of the Science Book.

2. Theoretical Framework

2.1. Omani Science Curriculum (Cambridge)

Considering the comprehensive evaluation of the school education system, the curriculum in general and science curriculum, as an essential component of the educational system, have received a continuous review and comprehensive development in its various aspects. For example, it starts with syllabuses, teaching methods, assessment methods, etc. This aligns with the future vision of education in the Sultanate 2040 and its philosophy and objectives.

Since the beginning of basic education, the Ministry of Education has been working hard to form a vision and a strategic plan for developing school education, working to develop all its sectors in parallel, raising the efficiency of the school education system and improving its outputs. This development will harmonize and align with the National Education Strategy 2020-2040. The Ministry of Education has also given great attention to the field of science education in line with the latest scientific, technological, and knowledge developments. To complement the objectives of basic education, the Ministry of Education has tended to benefit from international expertise, in line with the rapid development in this field, by adopting the Omani Science curriculum (Cambridge) project in teaching science per international criteria to develop students' research, inquiry, and conclusion skills, deepen their understanding of various scientific phenomena, and develop their competitive abilities later in the different stages of education and the labor market (Ministry of Education, 2017).

2.2. Evaluation Criteria for Selecting the Omani Science Curriculum

The Ministry of Education adopted a set of evaluation criteria for selecting the Omani Science curriculum (Cambridge). However, the main criterion was based on the degree of convergence of the criteria on which this series was built with the national criteria set by the Ministry of Education during the previous years. It is worth mentioning that the science subject criteria are stable in all educational systems worldwide due to the universality of these subjects. If there is a difference in these criteria between one educational system and another, they all agree on most of the educational objectives taught in the school education stage. Among the most important evaluation criteria adopted by the Ministry of Education are the following (Ministry of Education, 2017): the adoption of these series on the Cambridge International Criteria (officially). The components of the series are student's book, activity book, teacher's guide, electronic contents, scientific content and its presentation in the student's book and the teacher's guide, contents of the teacher's guide, and evaluation methods used.

Accordingly, it was agreed by the specialized committees to choose a series of Cambridge curricula.

These curriculums are characterized by the following: the scientific content of this series is characterized by the fact that it is based on realistic studies and research conducted at the University of Cambridge. Accordingly, it is characterized by scientific accuracy and modernity. There are various methods of displaying the scientific content in the student's book and the activity book. It is distinguished by the quality of the technical output, images, graphics, and tables in terms of clarity and data accuracy. The teacher's guide is distinguished by its richness of the proposed teaching strategies and by presenting all the ideas that can help the teacher teach the series smoothly, clearly, and coherently. The evaluation tools and methods are very well varied. Follow modern teaching and learning methods where the student is the center of the learning process. It helps the student apply what he learns in his daily life and provides him with the necessary skills and tools to ensure his success in life. It follows the spiral approach and the cooperative learning method in its content and builds on previous information gained. It deals with new topics in proportion to the students' age capabilities. Exceeding the limits of memorization and application, the student begins with observation and discovery and progresses to research and conclusion. Reading and written expression are encouraged to urge the students to pursue their educational attainment continuously. It considers the learners' multiple intelligence. Developing the cognitive, skill and emotional aspects of the learner enhances the skills of the twenty-first century so that the students, a researcher, participant, and innovator work in a team and enjoy their work.

2.3. Omani Vision 2040

The Sultanate of Oman has adopted Vision 2040 as an approach and a roadmap for action. It has drawn the vision's method, directions, and general policies and commitments so that the Sultanate of Oman will be a leading model at all levels.

Preparing Oman Vision 2040 is one of the most important mechanisms the state relies on to achieve comprehensive progress in all its sectors, including education. Here, the rise of nations is no longer subject to automatic development according to the circumstances. Rather, it depends on a clear vision that links the present to the future and on proper planning to mobilize and direct national energies. In this context, the Oman Vision 2040 future vision was prepared according to a holistic, multi-pronged scientific approach focused on the main areas of importance for Oman in the coming era. It follows the methodology of scientific research, where the vision drew its ideas from all segments of society. Then, these ideas were arranged according to different topics, axes, and sectors to extract percentages from them. It was reflected in enhancing its content and, most importantly, finding the spirit of belonging and ways to achieve the desired qualitative shift and creating a realistic and achievable vision (Al Balushi, 2020).

Oman's 2040 vision seeks to build a possible knowledge society, a creative person, proud of his identity and culture, committed to his citizenship and values, enjoying a decent life and sustainable well-being, and a comprehensive education that guarantees a lifelong education system; To develop future skills, contribute to the promotion of scientific research and build national capacities, to reach advanced levels of sustainable development (Oman Vision 2040, 2019).

Oman Vision 2040 has given special importance to the issue of education as a possibility to achieve it. It has devoted a wide area for discussion as one of the national issues and priorities. It has allocated many indicators and targets for measuring progress in education to make a qualitative leap in this field by focusing on providing diverse and sustainable funding sources. Operations support education in various fields, including curriculum, which will improve the Sultanate's position in education at the regional and global levels (Oman Vision 2040, 2019).

The issue of education development has become the focus of attention for most of the world's developed and developing countries. It constantly seeks to overcome the difficulties facing education. It can be said that the Sultanate of Oman, with the launch of its 2040 vision, which, if adopted, will ensure that there will be a comprehensive education that guarantees a lifelong education system under the title of "inclusive education and sustainable education." This era has imposed on all countries and organizations, at the forefront of which are educational organizations, to change their practices and rethink their activities to link education with development, provide appropriate outputs for the labor market, and thus develop society. It also imposed institutions to adopt new leadership and management concepts centered on development (Al Balushi, 2020).

3. Research Methods

This study aims to determine the availability of science curricula criteria for the Omani Science curriculum (Cambridge) for Grades 5-8 in the Sultanate of Oman considering Oman Vision 2040. Descriptive research will be used to answer the research questions.

3.1. Population and Sampling

The population of the research comprised a group of arbitrators with expertise and experience in science, curricula, teaching methods, measurement, and evaluation.

3.2. Instrument

After preparing the tool in its initial form, the researchers relied on the validity of the tool and content. This includes the validity of the general appearance of the form in terms of the type of vocabulary, how it is formulated, the extent of its clarity, and its objectivity. Additionally, it is checked that the items are related to the subject to be measured and the extent to which the

form is suitable for the purpose, for which it was developed. Furthermore, Mohajan (2017) indicated that the validity of the content is a basic indicator of the tool's validity, and it refers to the degree to which it confirms that the measure is valid for what it was designed for. This depends on the experience of the judges. The form was presented to a group of arbitrators with expertise and experience in science, curricula, teaching methods, measurement, and evaluation. To express their observations about the form in terms of the formulation of its vocabulary, the extent to which the criteria belong to the targeted objectives, their suitability, scientific accuracy, and clarity, and considering the arbitrators' observations.

4. Conclusion

4.1. Findings

Research Question 1: What are the Omani Science curriculum (Cambridge) criteria for Grades 5-8 considering Oman Vision 2040?

To answer the first question: considering the literature and previous studies that dealt with criteria and visions, and the analysis of the Omani science curriculum (Cambridge), the researchers prepared a list of these criteria, and it was presented to a group of arbitrators to find out their opinion and observations, and this list in its final form consisted of five areas, under which 40 standard ones fall, and Table 1 illustrates this.

Table 1. A list of criteria for the Omani science curriculum (Cambridge) for the fifth grade considering the objectives of Oman Vision 2040

The first axis: values and principles of the Islamic religion		22	Consolidating the principle of health for all
1	Observing the principles of the Islamic religion	23	Developing life skills
2	Developing a culture of teamwork (cooperative culture)	24	Building human capabilities
3	Promoting social responsibility	**The fourth axis: future skills**	
4	Promoting the culture of volunteering	25	Developing scientific research skills
5	Encouraging the acceptance of cultures	26	Developing critical thinking skills
6	Developing the concept of community partnership	27	Developing data handling skills
7	Promoting belonging to the Arabic language	28	Developing creativity and innovation skills
8	Developing the appreciation and respect of scholars	29	Developing inquiry-based learning skills
The second axis: Omani identity and heritage		30	
9	Including local issues	31	Developing problem-solving skills
10	Promoting pride in Omani scholars	32	Developing the skills of self-learning
11	Enhancing national identity	**The fifth axis: educational paths**	
12	Including national values	33	Entrepreneurship concepts
13	Developing community awareness	34	Developing skills and talents
14	Developing Omani customs and traditions	35	Developing the concept of motivation and ambition
15	Taking care of the Omani environment	36	Connecting science, technology, engineering, and mathematics
16	Developing pride in Omani achievements	37	Developing students' attitudes toward different specializations
The third axis: sustainable development		38	
17	Including concepts of natural resources	39	Keeping up with the requirements of the labor market
18	Including industrial resource concepts	40	Learning about new professions in the labor market
19	Including environmental issues		
20	Developing the concept of preserving national wealth		
21	Developing the concept of conservation of natural resources		

4.2. Comparison with Previous Studies

Many studies have evaluated the curriculum based on specific criteria yet did not carry it out per the criteria and objectives of Oman Vision 2040. Generally, the study by Al Badri and Mokhtar (2020) recommended evaluating the curricula, ensuring that they achieve the required objective. Additionally, these studies also suggested reviewing the content of science books, including educational experiences, and studies (Algaseem & Al-Omari, 2020; Al-Sadiq, 2019; Abu Athera, 2019; AlShehri, 2018; Al-Zawahera, 2014; Atifi, 2017) recommended having standards for evaluating science curricula. It is clear from the previously presented studies that all of them were characterized by strengths and weaknesses. For example, Al-Zawahera (2014) evaluated the curriculum considering the criteria of the Ministry of Education in Jordan and did not focus on national criteria in general. Subsequently, Atifi's (2017) study distinguished itself by identifying the availability of a list of national criteria for education. Moreover, in the curriculum history for the three grades of the preparatory stage, the participation of the National Vision is found to be absent. Therefore, the current study is the first to evaluate the Omani Science curricula considering Oman's vision for 2040. Therefore, this study will provide outstanding results regarding the availability of criteria for the objective of the Oman Vision 2040 in science curricula. Those in charge of science curricula and decision-makers can benefit from the results of this study. It will provide them with a list of criteria according to the Oman Vision 2040, which can be used as a guide when evaluating science curricula for Grades 1-4 and 9-12 in the future.

4.3. Academic Contribution

To the best of my knowledge, this study breaks new ground by being the first research attempt that seeks to verify the activation of the Oman Vision 2040 and to adapt its objectives to evaluating the Omani science curriculum (Cambridge) for Grades 5-8. In particular, no previous studies (Algaseem & Al-Omari, 2020; Al-

Sadiq, 2019; Abu Athera, 2019; AlShehri, 2018; Al-Zawahera, 2014; Atifi, 2017) in Oman have evaluated the Omani science curriculum considering Omani vision 2040. This study covers some crucial aspects, such as the curricular standards considering the vision of Oman 2040 and the extent of their application in the Omani science curriculum (Cambridge) for Grades 5-8.

4.4. Study Recommendations

- The necessity of raising the level of availability of the Oman Vision 2040 criteria in the content of science curricula for Grades 5-8.
- Considering the balance between the different standards in the content of the science curriculum for Grades 5-8.

Acknowledgments

The authors offer their gratitude to the Omani Ministry of Education, for facilitating the data collection of this research.

Authors' Contributions

All the authors were involved in conducting this research by doing a literature review, designing the research, collecting, and analyzing data, and reviewing the paper as one research team.

References

[1] ABU ATHERA, S.M. (2019). Evaluation of the Content of Saudi and Jordanian Science Textbooks for the Fourth Grade in the Light of International Standards (Comparative Study). *Journal of Educational and Psychological Sciences,* 20(3), 409-437. http://dx.doi.org/10.12785/jeps/200312

[2] AL BADRI, A., & MOKHTAR, E. (2020). Assessment of Science Books Content in the First Grade of Basic Education in Oman Sultanate in Light of Project Assessment Frameworks of Trends in International Mathematics and Science.

[3] AL BALUSHI, Y. (2020). Oman's Future Vision 2040, Scientific Research, and Innovation. *Institute of Public Administration,* 42(160-161), 39-70.

[4] ALGASEEM, M., & AL-OMARI, A. (2020). The Curriculum Developed in Light of the NGSS According to Teachers' Estimates in Oman. *International Journal of Educational Science and Research,* 10(2), 2249-6947. Retrieved from https://www.researchgate.net/publication/343057121_THE_CURRICULA_DEVELOPED_IN_LIGHT_OF_THE_NGSS_ACCORDING_TO_TEACHERS'_ESTIMATES_IN_OMAN

[5] AL-SADIQ, M. (2019). Evaluate the Scientific Content of the Biology Curriculum for Grade 10 in the Light of International Quality Standards. *Journal of the Islamic University of Educational and Psychological Studies,* 27(2), 305-328. Retrieved from https://journals.iugaza.edu.ps/index.php/IUGJEPS/article/view/3691

[6] ALSHEHRI, R. (2018). Evaluating the content of science curriculum in the first year of Intermediate schools in Saudi Arabia. *Journal of Educational and Psychological Sciences,* 2(28), 38-55.

[7] AL-ZAWAHERA, K. (2014). *Evaluating the First Basic Stage Curriculum in the Light of the Evaluation Standard of the Jordanian Ministry of Education from their Teachers' Views and Analyzing Its Content.* Unpublished doctoral dissertation, International University of Islamic Sciences.

[8] ATIFI, H. (2017). An Evaluation of the History Content in the Preparatory Stage in Light of the National Criteria. *Educational Journal,* 49, 87-117.

[9] MINISTRY OF EDUCATION. (2017). *A teacher's guide to science for the fourth grade (second semester).* Cambridge Press.

[10] MOHAJAN, H.K. (2017). Two Criteria for Good Measurements in Research: Validity and Reliability. *Annals of Spiru Haret University. Economic Series,* 17(4), 59–82. https://doi.org/10.26458/1746

[11] NATIONAL EDUCATION STRATEGY 2040. (2018). Retrieved from http://www.educouncil.gov.om/projects.php?scrolto=start#inline-htm1-1-1

[12] OMAN VISION 2040. (2019). *Vision Document.* Sultanate of Oman. Retrieved from https://www.2040.om/Oman2040-AR-pdf

参考文:

[1] ABU ATHERA, S.M. （2019）。根据国际标准评估沙特和约旦四年级科学教科书的内容（比较研究）。教育与心理科学杂志，20(3), 409-437 。http://dx.doi.org/10.12785/jeps/200312

[2] AL BADRI, A., & MOKHTAR, E. (2020)。根据国际数学和科学趋势的项目评估框架评估阿曼苏丹国基础教育一年级的科学书籍内容.

[3] AL BALUSHI, Y. (2020)。阿曼 2040 年的未来愿景、科学研究和创新。公共行政学院, 42(160-161), 39-70。

[4] ALGASEEM, M., & AL-OMARI, A. (2020)。根据阿曼教师的估计，根据 NGSS 开发的课程。国际教育科学与研究杂志，10(2), 2249-6947 。取自 https://www.researchgate.net/publication/343057121_THE_CURRICULA_DEVELOPED_IN_LIGHT_OF_THE_NGSS_ACCORDING_TO_TEACHERS'_ESTIMATES_IN_OMAN

[5] AL-SADIQ, M. (2019)。根据国际质量标准评估 10 年级生物学课程的科学内容。伊斯兰教育与心理研究大学学报，27(2), 305-328。

取自 https://journals.iugaza.edu.ps/index.php/IUGJEPS/article/view/3691

[6] ALSHEHRI, R. (2018)。评估沙特阿拉伯中学一年级科学课程的内容。教育与心理科学杂志，2(28), 38-55。

[7] AL-ZAWAHERA, K. (2014)。从教师角度看约旦教育部评价标准对第一基础阶段课程的评价及其内容分析[J]. 未发表的博士论文，伊斯兰科学国际大学。

[8] ATIFI, H. (2017)。国家标准对预备阶段历史内容的评价。教育期刊，49, 87-117。

[9] 教育部。(2017)。四年级（第二学期）科学教师指南。剑桥出版社。

[10] MOHAJAN, H.K. (2017)。研究中良好测量的两个标准：有效性和可靠性。斯皮鲁· 哈雷特大学年鉴。经济系列，17(4), 59–82。https://doi.org/10.26458/1746

[11] 2040 年国家教育战略。（2018 年）。取自 http://www.educouncil.gov.om/projects.php?scrolto=start#inline-htm1-1-1

[12] 阿曼 2040 年愿景。（2019 年）。愿景文件。阿曼苏丹国。取自 https://www.2040.om/Oman2040-AR-pdf